

► SPECIAL REPORT

Food Donation and Food Safety: Challenges, Current Practices, and the Road Ahead

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Abstract Millions of pounds of food are donated annually from grocery stores, restaurants, and other sources through thousands of food assistance agencies. Few local health departments have both the legal authority and resources to assure food safety in this highly decentralized network. A number of communities are using innovative public-private partnerships to improve donated food safety even in the absence of legal authority or significant new resources. These approaches begin with an understanding of the local food donation network, then progress to finding opportunities to create benefits for network members and seeking food safety improvements from network members.

Local health department leadership is needed to improve food donation safety programs. This involvement could include coordinating the variety of privately-based food safety inspections currently taking place and exploring funding opportunities through the tax savings enjoyed by food donors. This special report provides an overview of food donation networks and the food safety challenges common to many communities. It then explains some of the innovative programs being implemented in communities. Finally, we highlight opportunities for developing comprehensive food donation safety programs in the absence of significant new resources or legal authority.

Introduction

Over 12% of the U.S. population was food-insecure in 2015 (World Hunger Education Service, 2018). Risks to the food-insecure include not only hunger and malnutrition but also the consequences of having to choose between using limited funds for food or other needs, such as housing, healthcare, or transportation (Bartfeld & Collins, 2017; Nielsen, Garasky, & Chatterjee, 2010; Patton-Lopez, 2012). Food insecurity has been associated with increased risk of poor health and hos-

pitalization, and possibly psychological and behavioral disorders among children (Feeding America, 2016).

Most communities have developed a network of organizations to identify surplus food and make it accessible to those in need (Daponte & Bade, 2006). Much of this food is shelf-stable and handled by large organizations with significant resources devoted to food safety. Some of the most nutritious food, however, is perishable, including foods that are time/temperature controlled for safety

(TCS). In a single community, this food might be handled by over 100 small charitable organizations with limited food safety knowledge or resources (M. Hoffman, personal communication, July 26, 2017).

Establishing and managing public health programs to assure food safety throughout a local food donation network is a daunting task. Yet, lack of a food safety system not only increases the risk of foodborne illness but also can reduce food availability if potential donors consider food donation too risky.

This special report summarizes the importance—as well as the challenges—facing local health authorities in establishing food safety systems for food donation, highlights some of the promising practices found in U.S. communities, and suggests strategies for moving forward.

Furthermore, it addresses three questions:

1. What is the basic structure and function of the food donation network operating in most communities?
2. What role do local health departments typically play in this network and why?
3. What are the most promising opportunities for local health departments to improve food safety in the food donation network, even in the absence of legal authority and funding?

Relatively little work has been published on local food donation networks and food safety or the role of local health departments. To begin to answer the research questions above, we conducted an exploratory qualitative research study through interviews and site visits with experts and key stakeholders across the U.S. We hope that this initial work will lead to additional research and policy to improve food donation networks.

Local Food Donation Networks

The commercial food system begins with those who grow, process, and distribute our food (Figure 1). Finally, food reaches the retail level, which can include grocers, restaurants, institutional food services (schools, hospitals, etc.), and others. Surplus food can occur at any stage in this system.

Surplus food prior to the retail level generally occurs in large quantities (by the pallet load or truckload) and typically is collected and stored by large food banks (Bazerghi, McKay, & Dunn, 2016). Feeding America (www.feedingamerica.org) is a network of more than 200 food banks covering the entire U.S. but many independent food banks also exist. Food banks generally do not distribute food directly to the public but distribute to food assistance organizations (commonly referred to as agencies) that serve food-insecure populations. Agencies may operate grocery programs (pantries) and/or meal programs (soup kitchens, shelters, etc.). Food banks might deliver food to the agencies or agencies might travel to a food bank to retrieve the food.

At the retail level, surplus food often occurs in smaller quantities at individual retail outlets, making collection and transportation less cost-effective. Food banks might pick up surplus food from large grocery stores but pick up from other retail outlets is less common. As a result, smaller grocery stores, restaurants, and institutions that wish to donate food typically donate directly to agencies. Agencies often use volunteers to collect surplus food from retail outlets.

Food Safety Best Practices and Ongoing Challenges

There is abundant guidance on best practices in protecting the safety of donated food. For example, the Conference for Food Protection (2016) published the *Comprehensive Resource for Food Recovery Programs*. Feeding America has created a detailed guidance document on donated food safety to be used in conjunction with ServSafe's *Food Handler Guide for Food Banking* (Feeding America, n.d.; National Restaurant Association, n.d.). The U.S. Department of Agriculture (USDA) also has food safety requirements for food banks and agencies receiving government-purchased commodities (see 7 C.F.R. 250 and 251). Harvest Support Network (<http://harvestsupportnetwork.org>) is a nonprofit

created by the Food Donation Connection to provide food safety training materials, including videos, for organizations and individuals involved in food donation (J. Larson, personal communication, July 12, 2017).

Despite the extensive guidance available, most local food donation networks still face significant food safety challenges. To better understand these food safety challenges, consider the movement of donated foods from restaurants directly to food assistance agencies. Below we describe seven typical steps in the food donation process, from retail outlet to pantry. Steps 1–2 take place within the donor's facility, step 3 in the transport vehicle, and steps 4–7 at the pantry. This list is not meant to be exhaustive but rather highlights critical steps common to food donation. Some food safety concerns at each step are noted.

- 1. Identify surplus food:** When a food item is no longer appropriate to be served or sold, it must be determined whether the item is safe to donate or whether it must be discarded. This decision is not simple and can involve judgments about expiration dates, how the food has been held, and whether it will be frozen prior to donation. Receipt of unsafe or unfit food is a common problem reported to us by pantries.
- 2. Repackage/label/store:** If not prepackaged, all items must be labeled as to the contents, package date, and discard date (if appropriate). Some food items are in bulk quantities and should be repackaged ideally to a size appropriate to a pantry. Food should be held at the proper temperature, without risk of contamination, and clearly indicated for donation. Failure in all of these areas have either been observed by the authors or reported to us by pantries.
- 3. Retrieve and transport:** Transportation is a critical step. Time/temperature control and contamination are significant challenges. Many pantries send volunteers, using their own vehicles, to pick up donated food. Donors have reported to us that places sometimes refuse to donate at the time of pick up because of the condition of the vehicle interior. Appropriate measures for time/temperature control are unclear. Some donors argue that only refrigerated vehicles should be used for TCS foods. Starbucks, for example, has provided grants to some communities to assure that refrigerated vehicles are used to pick up TCS foods from

their stores (B. Edean, personal communication, August 3, 2017). Others argue that the frequent openings necessary for food pick up at multiple stops make refrigerated vehicles ineffective. Food Donation Connection allows for pick up in a nonrefrigerated vehicle provided the food is kept in coolers under ice packs (J. Larson, personal communication, July 12, 2017). Yet, some agencies argue that keeping trips short—under 15 min—is the best way to transport TCS foods. Time/temperature logs from pick up to delivery seem essential but evidence suggests that many pantries do not keep such logs.

- 4. Receive and assess:** Upon receipt at the pantry, food should be checked to assure it is safe for consumption. As noted above, unsafe or unfit food is not uncommon. There seems to be considerable confusion about the meaning of expiration dates and how long after expiration it is typically safe to consume various foods.
- 5. Repackage/label/store:** Cold storage is a concern, as many pantries do not have commercial refrigeration equipment and adequate equipment temperature logs often are not maintained. Some pantries are open only once per week and culling expired inventory can be lacking. Pantries sometimes repackage bulk foods that were not repackaged by the donor. We observed facilities for repackaging ranging from clean rooms with sinks and gloves to card tables set up within the pantry traffic pattern.
- 6. Display:** Even if a pantry has adequate cold storage, it might not have cold display equipment to use during the hours the pantry is open. As a result, TCS foods might be displayed at room temperature, relying on staff to rotate food items back into storage before they have been out too long.
- 7. Reassess:** After pantry open hours, remaining foods must be assessed to determine if they will still be safe to consume the next time the pantry is open. Some pantries have reported to us that they get food donations from other pantries that no longer want to hold the food. Starbucks mandates that pantries receiving their TCS foods cannot donate the food to any other pantries and must discard the food if it was displayed without proper refrigeration (B. Edean, personal communication, August 3, 2017).

Inspection and permitting of agency facilities vary greatly by local and state jurisdiction and depend on legal exemptions, interpretation of terms such as food service establishment, and available resources. Some locations permit and inspect all food assistance agencies that handle perishable foods. More commonly, permitting and inspection are limited to those agencies preparing meals. Permitting fees frequently are waived. A systematic review of state legal requirements for donated food is currently underway at the Food Law and Policy Clinic at Harvard Law School (Blazek et al., 2016).

Alternative Models

We define a food donation safety program as follows: A community-wide system to assure the safety of all food distributed through the local food donation network. We are not aware of any one model that has resolved all donated food safety issues or that would be appropriate for all communities. Instead, we have found a variety of programs being tried in different communities based on their available resources, legal authority, and other local factors. We have organized these programs into four general groups, which we recognize is not an exhaustive accounting of the types programs being used in communities—even within one model, individual programs can vary considerably.

We propose the criteria in Table 1 for evaluating alternative models for food donation safety programs. The four models are discussed using these criteria. The second evaluation criterion—food safety expectations are responsive to the needs of the food-insecure—is not discussed further because it is relatively independent of the model being evaluated. Instead, this second evaluation criterion depends upon the food safety requirements adopted, regardless of the model being used.

Hands-Off or Kitchen-Only Model

This model appears to be the most common one found in U.S. communities. In some communities, donated food and the organizations that handle the donated food are (or are thought to be) exempt from local health department regulation. In some other communities, only organizations that prepare meals from donated food are considered subject to regulation and are permitted and inspected by local health authorities. Meal

TABLE 1

Criteria for Evaluating Alternative Models for Food Donation Safety Programs

Criteria	Notes
Food safety programs include practices known to be effective	Should be based on food safety guidance documents described in the text.
Food safety expectations are responsive to the needs of the food-insecure	Lack of food for the food-insecure poses its own set of public health risks. Food safety practices that make a small improvement in donated food safety but result in a large reduction in food availability could aggravate public health risks rather than reduce them. Thus, some practices expected in commercial food service establishments might not be appropriate for donated food (e.g., equipment standards, food expiration dates, etc.).
Food safety conditions and practices are reasonably verified and enforced by unbiased parties	Given limited resources and legal authority, verification and enforcement by organizations other than the local health department should be considered.
Requires resources consistent with those locally available	
Food safety programs improve the food donation network	The decentralized nature of local food donation networks limits effectiveness. Some food safety programs can reduce these problems.

programs pose a number of important food safety risks; however, they generally represent a minority of donated food and therefore affect a small proportion of the food-insecure population (P. Turner, personal communication, July 24, 2017).

A hands-off program would not advance best practices for food safety. A kitchen-only program would assure best practices through inspection and enforcement in meal program agencies but would not address other components of the food donation network. Neither approach would help improve donation network function.

Universal Inspection Model

Health department permitting and inspection of all organizations involved in food recovery are very resource intensive. While we are aware of local governments that take this approach, we believe that relatively few have the resources for this model, especially if permitting fees are waived for these organizations. This approach could significantly advance best practices for food safety but would not, on its own, improve donation network function.

Coordinating Council Model

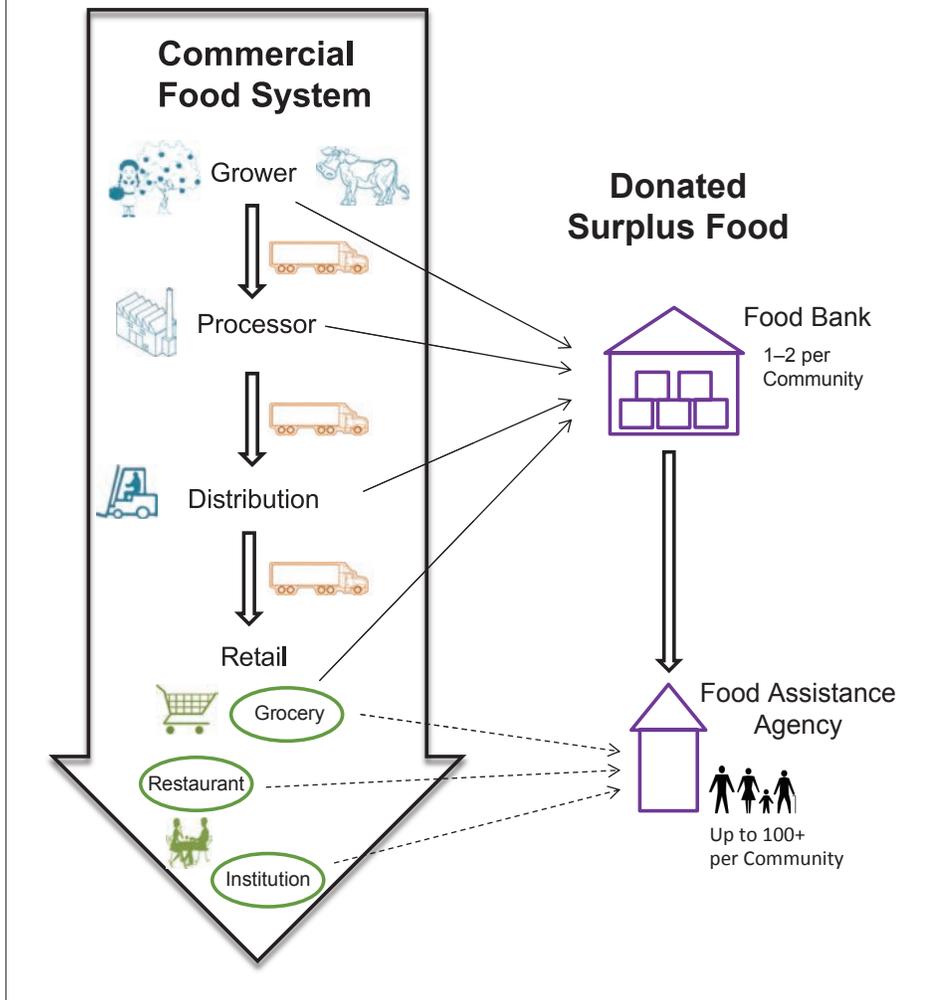
A few communities have created new organizations that attempt to offset problems caused

by the highly decentralized nature of the food donation network. We call this approach the Coordinating Council Model because the organization generally is composed of representatives from organizations in the food donation network, local government officials, and food-related businesses. Two examples from this model are the Waste Not OC Coalition in Orange County, California (www.wastenotoc.org) and the Food Rescue Partnership in the Quad Cities of Iowa/Illinois (<https://foodrescueqc.org>). Both were created as part of local health department initiatives (Garcia-Silva, Handler, & Wolfe, 2017; L. Hensel, personal communication, June 30, 2017).

These councils benefit the local food-assistance agencies, which provides the councils with leverage to improve food safety. Council activities include providing outreach to the food-insecure to help connect them with agencies in their area. This assistance often includes producing printed and online maps of agency locations and capabilities. The Waste Not OC Coalition provides outreach to area physicians to perform food-insecurity screenings of their patients and refer patients to local agencies (Garcia-Silva et al., 2017). The coalition also provides outreach to local government entities to improve coordination between local governments and local agencies. These coor-

FIGURE 1

A Typical Local Food Donation Network



ordinating councils include local health departments; therefore, health inspectors have begun providing information to area food establishments on the legality and benefits of donating surplus food (E. Bradley, personal communication, July 6, 2017; M. Haller, personal communication, July 21, 2017). The Food Rescue Partnership also provides a 15-min presentation on food donation as part of the food safety training course taken by restaurant managers. The Waste Not OC Coalition includes major food distributors in the coordinating council. These companies are often aware of untapped resources in the community, such as used refrigeration equipment that can be donated to food assistance

agencies (M. Haller, personal communication, July 21, 2017).

These benefits provided to local agencies give coordinating councils leverage with regard to food safety. For example, the Waste Not OC Coalition requires that all agencies listed in their materials must agree to follow a set of food safety procedures and undergo inspections by volunteer inspectors who have been trained by the Waste Not OC Coalition (M. Haller, personal communication, July 21, 2017). Local health inspectors also provide food safety training to agency personnel.

In fact, food safety is the top priority at the Waste Not OC Coalition. Mike Learakos,

executive director, stated the primary mission as “protecting the brand of food donors” (M. Learakos, personal communication, July 31, 2017). Federal and state law provides legal liability protection to donors against any subsequent food safety claims but publicity related to possible illness from donated food could be devastating to the brand name of a restaurant or grocery chain. Learakos sees a systematic food safety program for donated food as the best way to maintain and increase food donation.

With regard to our evaluation criteria, the coordinating council model has the potential to score well on providing best food safety practices and on verification/enforcement, if required of participating agencies and if the benefits to agencies are sufficient to incentivize them to participate. Basic coordinating councils require relatively few resources because council members generally are not compensated. Developing outreach materials or hiring staff, however, would require additional resources. If the use of trained volunteers to perform food safety inspections proves effective, this option would be a low-cost solution. One of the greatest benefits of the coordinating council model is its potential to strengthen the food donation network through improved communication and coordination; outreach to food-insecure populations, government, and potential food donors; and mobilization of untapped resources.

Small-Load Logistics Organization Model

As indicated in Figure 1, food donation pick up from restaurants and smaller grocery stores typically is performed by individual agencies with volunteers who frequently use their own vehicles. This method is also the way many agencies obtain food from food banks. This method represents a critical food safety risk as volunteers are often untrained, have few available resources to maintain food safety, and vehicles and procedures are generally not inspected. The decentralized and uncoordinated food logistics process can also be a significant barrier to food donation due to its complexity and lack of reliability (Food Shift, 2015; Natural Resources Defense Council, 2017).

A few communities have responded to these challenges through formation of an organization specializing in logistics for small loads of donated foods (in contrast to the pallet- or truck-size loads collected by food banks).

Table-to-Table of Iowa City, Iowa, has operated since 1996, providing pick ups from area grocery stores and restaurants and delivering the food immediately to area agencies (<https://table2table.org>). Table-to-Table has their own vehicles, some of which are refrigerated, and provides their volunteer drivers with food safety training (N. Ross, personal communication, July 13, 2017). Food Finders (www.foodfinders.org) in the greater Los Angeles area performs similar services but most pick ups are made by their trained volunteers using personal vehicles (P. Larson, personal communication, August 2, 2017). Almost all donated food is delivered to an agency within 5 miles.

In addition, the benefit to local agencies provides some leverage to promote food safety. Food Finders, for example, requires all participating agencies that have staff working in food banks and food recovery to have one staff member who is a certified food handler (P. Larson, personal communication, August 2, 2017). While we are not aware of a small-load logistics organization that requires inspections of their participating agencies, Table-to-Table does help their agencies prepare for inspections from their local Feeding America food bank (N. Ross, personal communication, July 13, 2017).

With regard to our evaluation criteria, the small-load logistics organization model has the potential to score well on implementing best food safety practices in food logistics. It can also promote best practices among agencies through requirements such as food safety certified personnel. Inspection and enforcement could also be made a requirement for participating agencies. The resources to operate a logistics organization, however, can be substantial, especially if dedicated vehicles are owned and operated. These resources must either be obtained by charging agencies for food or from philanthropic donors—many of whom might be the same donors being approached by agencies. While not as comprehensive as coordinating councils,

small-load logistics organizations can help improve the food donation network through opportunities for better communication and cooperation among agencies and as a point of contact for local government.

Conclusion and Recommendations

Even though this research was exploratory, a number of useful conclusions can be drawn.

- Local food donation networks tend to be highly decentralized and operate on extremely limited budgets. These conditions contribute to food safety risks.
- There is ample guidance on food safety practices relevant to local food donation networks.
- Leadership of the local health department in assuring food safety and improving the local food donation network appears to be the exception rather than the rule.

Assuring the safety of food donation networks is challenging but local health departments must take the lead. In the absence of funding and clear legal authority, this leadership will require innovation and local team building. Fortunately, a few communities have created model programs that can be adapted and improved by health departments across the country. The coordinating council and small-load logistic organization models demonstrate that food safety conditions can be improved without new legal authority and with little or no new government funding. These models still have shortcomings, though, particularly in the areas of inspection/enforcement and increasing private funding.

Many food donation agencies (pantries, shelters, etc.) might already be inspected by other organizations such as USDA, USDA-delegated state agencies, food banks, or other private organizations (such as Food Donation Connection). What is missing is local health department oversight of this process. It could be possible for the health department to routinely receive copies of inspection reports as part of the requirements for agencies to par-

ticipate in coordinating council, small-load logistics, or other programs.

It could also be possible to increase funding for food safety through private donors. Food donation can have substantial financial benefits to donor companies. Federal tax law provides enhanced deductions to create strong incentives for companies to donate surplus food (Broad Leib, Rice, Balkus, & Mahoney, 2017). For example, Food Donation Connection assists restaurants and other food retailers to safely and conveniently donate their food locally and is paid by receiving a share of the tax savings accruing to the donor (J. Larson, personal communication, July 12, 2017). Donors might be willing to share a portion of tax savings once convinced of the “brand protection” benefits from an improved food donation network.

We strongly encourage local health departments to take a leadership role in their local food donation network. We suggest the following action items.

1. Clarify your legal authority.
2. Connect with your local food donation network. Your local food banks are a good place to start. Contact Food Donation Connection to see what restaurants in your area donate and who collects the food. Ask grocers to whom they donate.
3. Determine which agencies are inspected, how often, by whom, and using what evaluation criteria. Is there a written record of each inspection?
4. Discuss with key stakeholders in the food donation network about developing a coordinating council, small-load logistics organization, or other model for improving food safety as well as improving network function. 🐼

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